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09/733,629	12/08/2000	David A. Brown	2037.2014-000	2407

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EXAMINER
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HOM, SHICK C

ART UNIT	PAPER NUMBER
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2616

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08/01/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

09/733,629

Applicant(s)

BROWN, DAVID A.

Examiner

Shick C. Hom

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892).
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed 5/22/07 have been fully considered but they are not persuasive.

In page 7 lines 8-21, applicant argued that Grinberg et al. do not teach or suggest "providing access to a first set of routes stored in nodes of a first subtree within a tree ... and storing a second set of routes in nodes of a second subtree disconnected from the tree" because in Fig. 14 of Grinberg, the subtree B 1405 is connected to the subtree Z (1430, 1406, 1407) by node Y 1402, is not persuasive because the invention of Grinberg has other uses than the invention claimed by the applicant as noted in page 6 line 24 to page 7 line 3 and page 8 lines 3-9 of the remarks; however the structure between the claimed invention and that of the prior art is not patentably distinguishable because subtree B 1405 is not connected to the tree Z (1403, 1406, 1407) as shown in Fig. 14 and Fig. 16 shows how the invention of the prior art connects the subtree B to the tree Z as shown in Fig. 16, resulting in the tree Z (1606, 1603, 1607) as now claimed.

In response to applicant's argument in page 8 lines 17-23 that there is no suggestion to combine the references, the

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examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Tzeng provides more efficiency for the system design of Grinberg et al. because Tzeng teaches using a known means and method of implementing the tree structure by storing the routes in the nodes and providing the desirable added feature of connection to the internet via IP address in the system of Grinberg et al. The motivation for using the memory manager as taught by Nakatsu et al. in the method and apparatus of Grinberg et al. and Tzeng being that it provides more efficiency for the system since the system can function using less memory by deallocating the memory no longer needed.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 3-5, 7-9, and 11-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grinberg et al. (5,384,568) in view of Tzeng (6,067,574).

Grinberg et al. disclose a method for updating a lookup table comprising the steps of providing access to a first subtree within a tree, the first subtree being accessed through a first pointer to a first subtree root node (see col. 11 line 56 to col. 14 line 24 which recite the technique of splaying tree and Fig. 14 which shows the tree consisting of node z 1403 and subtrees C 1406 and D 1407, whereby subtree C 1406 corresponds to the first subtree within the tree); a second subtree disconnected from the tree, the second subtree being accessed through a second pointer to a second subtree root node and being initially inaccessible via the tree (see Fig. 14 the subtree B 1405 which corresponds to the second subtree separate from the tree 1403, 1406, 1407), while access via the tree is provided to the first subtree by the first pointer; and switching access to the second subtree by replacing the first

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pointer to the first subtree root node with the second pointer to the second subtree root node to update the tree by replacing the first subtree with the second subtree (see corresponding Fig. 16 whereby the second subtree B 1405 is switched to replace the first subtree C 1406 as shown in Fig. 16 by subtree B 1606 by replacing pointer).

Grinberg et al. disclose all the subject matter of the claimed invention with the exception of the set of routes being stored in the nodes of the subtrees as in claims 1, 5, 9, 13; wherein the number of routes in the first set of routes is less than or greater than the number of routes in the second set of routes as in claims 3-4, 7-8, 11-12; and wherein the first set of routes and the second set of routes include a longest prefix route for the destination address; wherein the destination address includes an IP Protocol address; wherein the second set of routes includes another route corresponding to the longest prefix route for another destination address; wherein the first set of routes and the second set of routes are associated with nodes at the bottom level of a subtree as in claims 14-17.

Tzeng the same or similar fields of endeavor teach that it is known to provide set of routes being stored in the nodes of the subtrees (see col. 2 lines 18-45, col. 2 line 64 to col. 3 line 17, and col. 3 line 63 to col. 4 line 23 which recite the

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IP routing lookup table having pointer to the root node of a tree, insertion and deletion of entries in the lookup table, and whereby the subtree begins at the root node of the tree, respectively as in claims 1, 5, 9, 13); wherein the number of routes in the first set of routes is less than or greater than the number of routes in the second set of routes (see Fig. 3 where the number of routes from node B is greater than the number of routes from node C as in claims 3-4, 7-8, 11-12); and wherein the first set of routes and the second set of routes include a longest prefix route for the destination address; wherein the destination address includes an IP Protocol address; wherein the second set of routes includes another route corresponding to the longest prefix route for another destination address; wherein the first set of routes and the second set of routes are associated with nodes at the bottom level of a subtree (see the abstract and col. 3 line 53 to col. 4 line 23 which recite the use of the destination address includes searching for the prefix having the longest match when compared to the destination address; and col. 1 lines 8-10 which recite the stored IP routing information as in claims 14-17).

Thus, it would have been obvious to the person having ordinary skill in the art at the time the invention was made to provide the set of routes being stored in the nodes of the

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subtrees; wherein the number of routes in the first set of routes is less than or greater than the number of routes in the second set of routes; and wherein the first set of routes and the second set of routes include a longest prefix route for the destination address; wherein the destination address includes an IP Protocol address; wherein the second set of routes includes another route corresponding to the longest prefix route for another destination address; wherein the first set of routes and the second set of routes are associated with nodes at the bottom level of a subtree as taught by Tzeng in the communications apparatus and method of Grinberg et al.

The set of routes being stored in the nodes of the subtrees; wherein the number of routes in the first set of routes is less than or greater than the number of routes in the second set of routes; and wherein the first set of routes and the second set of routes include a longest prefix route for the destination address; wherein the destination address includes an IP Protocol address; wherein the second set of routes includes another route corresponding to the longest prefix route for another destination address; wherein the first set of routes and the second set of routes are associated with nodes at the bottom level of a subtree can be implemented by storing set of routes in the nodes of the subtress and having number of routes in the



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first set of routes being less than or greater than the number of routes in the second set of routes which include a longest prefix route for the destination address; wherein the destination address includes an IP Protocol address; wherein the second set of routes includes another route corresponding to the longest prefix route for another destination address; wherein the first set of routes and the second set of routes are associated with nodes at the bottom level of a subtree of Tzeng in the subtrees and of Grinberg et al.

The motivation for storing set of routes in the nodes of the subtrees and having number of routes in the first set of routes being less than or greater than the number of routes in the second set of routes which include a longest prefix route for the destination address; wherein the destination address includes an IP Protocol address; wherein the second set of routes includes another route corresponding to the longest prefix route for another destination address; wherein the first set of routes and the second set of routes are associated with nodes at the bottom level of a subtree as taught by Tzeng in the communication method and apparatus of Grinberg et al. being that it provides more efficiency for the system design since the system uses a know mean and method of implementing the tree structure by storing the routes in the nodes and provided the

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desirable added feature of connection to the internet via IP address in the system of Grinberg et al.

4. Claim 2, 6, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grinberg et al. (5,384,568) and Tzeng (6,067,574) in view of Nakatsu et al. (5,787,151).

For claims 2, 6, and 10, Grinberg et al. and Tzeng discloses the method and apparatus described in paragraph 4 of this office action. Grinberg et al. and Tzeng discloses all the subject matter of the claimed invention with the exception of the step and means of deallocating the memory used by the first set of routes after switching access.

Nakatsu et al. from the same or similar fields of endeavor teach that it is known to provide the step and means of deallocating the memory used by the first set of routes after switching access (see col. 12 lines 13-29 which recite upon call termination, the manager deallocating the memory buffers to be available for use by other call flows). Thus, it would have been obvious to the person having ordinary skill in the art at the time the invention was made to provide the step and means of deallocating the memory used by the first set of routes after switching access as taught by Nakatsu et al. in the method and

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apparatus of Grinberg et al. and Tzeng. The step and means of deallocating the memory used by the first set of routes after switching access can be implemented by connecting the memory manager of Nakatsu et al. to the memory of Grinberg et al. and Tzeng. The motivation for using the memory manager as taught by Nakatsu et al. in the method and apparatus of Grinberg et al. and Tzeng being that it provides more efficiency for the system since the system can function using less memory by deallocating the memory no longer needed.

#### **Conclusion**

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shick.C. Hom whose telephone number is 571-272-3173. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pham Chi can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or

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access to the automated information system, call 800-786-9199

(IN USA OR CANADA) or 571-272-1000.

SH SH

  
CHI PHAM  
SUPERVISORY PATENT EXAMINER

7/30/07